Serial No. 10/729,201
Atty. Doc. No. 2002P06120WOUS

IN THE CLAIMS:

Please amend the claims as shown.

1. (currently amended) A method for producing monocrystalline structures, components or workpieces on substrates, comprising:

providing epitaxial growth of an epitaxial layer;

melting a surface of the component by an energy input of an energy source by a ~~focused length~~ focal spot of the energy source having a substantially linear, elliptical or rectangular geometry with a width corresponding to a width of the surface to be melted and a length in a direction of movement of the focal spot transverse to the width that is less than the width;

advancing the ~~focused length~~ focal spot in a single continuous movement in ~~a z~~ the direction transverse to the width only;

controlling a temperature of the focused length of the energy source by an optical system to determine when a next epitaxial layer is to be formed;

feeding material to the molten area; and

melting the fed material completely, whereby the molten material is introduced into the monocrystalline structure to solidify.

2. (previously presented) The method as claimed in claim 1, wherein the energy input takes place by a laser.

3. (previously presented) The method as claimed in claim 1, wherein the energy input takes place by electron beams.

4. (currently amended) The method as claimed in claim 1, wherein the ~~focused length~~ focal spot produces a molten area with a substantially linear, elliptical or rectangular geometry.

5. (currently amended) The method as claimed in claim 1, wherein the ~~size~~ width of the ~~focused length~~ focal spot is changed during operation in response to a sensed width of the surface to be melted.

6. (currently amended) The method as claimed in claim 1, wherein the ~~focused length~~ focal spot has profile ends, and the intensity of the energy input is increased at the profile ends as compared with the middle area of the ~~focused length~~ focal spot.

7. (previously presented) The method as claimed in claim 1, wherein the feed of material takes place by at least one material feed, and the material feed is varied in terms of time and location.

8. (currently amended) The method as claimed in claim 15, wherein the temperature of the ~~focused length~~ focal spot of the energy source is controlled by an optical system.

9. (currently amended) The method as claimed in claim 1, further comprising:

moving the ~~focused length~~ focal spot over the substrate in a direction of advancement wherein the substrate has an area to which material is added; and

adapting the ~~focused length~~ focal spot to the geometry of the area such that ~~a~~ the width of the ~~focused length~~ focal spot is adapted to ~~the~~ a width of the area transversely in relation to the direction of advancement.

10. (canceled)

11. (previously presented) The method as claimed in claim 1, wherein the monocrystalline structures, components or workpieces are produced from metal superalloys.

12. (currently amended) The method as claimed in claim 2, further comprising: moving the ~~focused length~~ focal spot over the substrate in a direction of advancement wherein the substrate has an area to which material is added; and adapting the ~~focused length~~ focal spot to the geometry of the area such that ~~a~~ the width of the focused length is adapted to ~~the~~ a width of the area transversely in relation to the direction of advancement.

13. (currently amended) The method as claimed in claim 3, further comprising: moving the ~~focused length~~ focal spot over the substrate in a direction of advancement wherein the substrate has an area to which material is added; and adapting the ~~focused length~~ focal spot to the geometry of the area such that ~~a~~ the width of the focused length is adapted to ~~the~~ a width of the area transversely in relation to the direction of advancement.

14. (previously presented) The method as claimed in claim 1, wherein the substrate having a monocrystalline structure or monocrystalline structures.

15. (currently amended) A method for producing monocrystalline structures, components or workpieces on substrates comprising:

providing epitaxial growth;

melting a surface of the component by an energy input of an energy source by a ~~focused length~~ focal spot of the energy source, the ~~focused length~~ focal spot having a substantially linear, elliptical or rectangular geometry with a width corresponding to a width of the surface to be melted and a length in a direction of movement of the focal spot transverse to the width that is less than the width;

controlling a power intensity at opposed ends of the width of the focal spot to be greater than a power intensity in a central area of the width of the ~~focused length of the energy source such that the power intensity remains constant in the focused length~~ focal spot;

feeding material to a molten area; and

melting the fed material with the surface, whereby the molten material is introduced into the monocrystalline structure to solidify.

16. (previously presented) The method as claimed in claim 15, wherein the energy input takes place by a laser.

17. (previously presented) The method as claimed in claim 15, wherein the energy input takes place by electron beams.

18. (currently amended) The method as claimed in claim 15, wherein the ~~focused length~~ focal spot produces a molten area with a substantially linear, elliptical or rectangular geometry.

19. (previously presented) The method as claimed in claim 15, wherein the monocrystalline structures, components or workpieces are produced from metal superalloys.

20. (previously presented) The method as claimed in claim 15, wherein the substrate having a monocrystalline structure or monocrystalline structures.

21. (currently amended) The method as claimed in claim 15, wherein the width of the focal spot ~~focused length~~ is ~~adapted to the width of the filling area~~ controlled so that a complete pass over a surface to be treated takes place in a single continuous advancing movement.

22. (previously presented) The method as claimed in claim 1, wherein the optical system views the surface area to be treated.